REMARKS

Applicants acknowledge receipt of an Office Action dated April 16, 2002. In this response Applicants have amended claims 4 and 7 to correct for minor informalities. Following entry of these amendments, claims 1-8 are pending in the application.

Reconsideration of the present application is respectfully requested in view of the foregoing amendments and the remarks which follow.

Claim Objections

In the Office Action, the PTO has objected to claims 4 and 7 for minor informalities. In this response, Applicants have amended these claims to correct for these obvious typographical errors. These amendments do not narrow the scope of these claims.

Rejections Under §103 - Claims 1-4, 6 and 7

On page 2 of the Office Action, the PTO has rejected claims 1-4, 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Publication 10-092796 by Imafuku (hereafter "Imafuku") in view of Japenese Patent Publication 01-213910 by Ando (hereafter "Ando") and U.S. Patent 5,919,332 to Koshiishi *et al.* (hereafter "Koshiishi"). Applicants respectfully traverse this rejection.

The PTO has applied Imafuku as a primary reference, stating that Imafuku discloses a product "made of alumina and magnesia (MgO) and has a purity of 99.9%, a bulk density of 3.98 g/cm^3, and an average grain size of 10 to 100 micrometers." (last full paragraph, page 2 of Office Action). In addition, the PTO has acknowledged that Imafuku does not teach surface roughness. (second full paragraph, page 3 of Office Action).

As discussed in MPEP §716.01, the PTO *must* consider comparative data in the specification. Further, as discussed in MPEP §716.02(e), Applicants need only compare their invention with the closest single prior art reference since requiring applicants to compare their invention to a combination of references would be requiring comparison of the results of the invention with the results of the invention. In the present application, Applicants have provided comparative data which has been summarized in Tables 1 and 2 on page 22 of the specification. Taking Imafuku, the primary reference applied by the

PTO, as the closest prior art, Applicants discuss below the comparative data shown in the present specification as it relates to Imafuku.

The product of Comparative Example 1, as Imafuku, is made of alumina and magnesia (the Mg in Table 1 refers to MgO – see the first full paragraph on page 12), has a purity of 99.9%, has a bulk density of 3.98 g/cm^3, and an average grain size 13 μm (within the 10 to 100 micrometer range of Imafuku). Imafuku includes no example that is closer than Comparative Example 1. **For Comparative Example 1, the discharge time before particles exceed the control value is 22 hours.**

The plasma resistant member of claim 1 of the present invention comprises "an average grain size of 18-45 μm, a surface roughness of 0.8-3.0 μm, and a bulk density of 3.90 g/cm^3 or over." Example 1, shows data for an average grain size of 24 μm, a surface roughness of 1.3 μm, a bulk density of 3.99 g/cm^3, all values within the ranges of claim 1. **In contrast to Comparative Example 1, the discharge time before particles exceed the control value for Example 1 is 80 hours.**

Thus, as shown by the discharge times for Example 1 and Comparative Example 1, the combination of parameters of claim 1, provides unexpected results as compared to an embodiment that is closer to the claimed invention than any embodiment in the closest single reference applied by the PTO.

The present invention has patentably advantageous effects in comparison with Imafuku. In particular, it should be noted that claim 1 recites both "an average grain size of 18-45 μm" and "a surface roughness Ra of 0.8 - 3.0 μm". It is very important to satisfy both of these elements in order to obtain the remarkable results discussed on pages 8-10 of the specification. (See, in particular, page 10, lines 11-17).

According to the inventors' extensive studies, the relation between the smoothness of a member and the average grain size of an alumina sintered product affects the break away of a polymer deposit film. More particularly, it was found that the polymer deposit film was most difficult to fall off when the member was finished to have a surface roughness Ra of 0.8 - 3.0 μm and the average grain size of an alumina sintered product was 18 μm or over.

Although Imafuku discusses grain sizes, this reference never suggests anything at all about the surface roughness or smoothness, and Kosiishi, while discussing surface roughness or smoothness, never suggests the average grain sizes recited in present claim 1.

Thus, even if a person having ordinary skill in the art were to have considered combining Imafuku and Koshiishi so as to obtain a plasma resistant member with "an average grain size of 18 - 45 μm" and "a surface roughness Ra of 0.8- 3.0 μm" as recited in instant claim 1, this person would not have expected to obtain a member which avoids the problem of the polymer deposit film falling off of the member. The invention therefore manifests an unexpected result in comparison with the closest prior art.

Ando relates to alumina ceramic compositions in an entirely different technology and deals with entirely different properties for use in another field. Ando does not suggest any use of a plasma-resistant member. Thus, Ando is nonanalogous art, and there is no basis for combining Ando with Imafuku.

In view of the objective evidence and the foregoing remarks, Applicants submit that claim 1, as well as claims 2-4, 6 and 7 which depend therefrom, are non-obvious and respectfully request reconsideration and withdrawal of the outstanding rejection of these claims.

Rejections Under §103 – Claims 5 and 8

On page 4 of the Office Action, the PTO has rejected claims 5 and 8 under 35 U.S.C. §103(a) as being unpatentable over Imafuku in view of Ando and Koshiishi and further in view of U.S. Patent 6,149,730 to Matsubara *et al.* (hereafter "Matsubara"). Applicants respectfully traverse this rejection.

Applicants submit that claim 1 is non-obvious for the reasons set forth above. As discussed in MPEP §2143.03, where an independent claim is non-obvious under §103, any claim depending therefrom is also non-obvious. For this reason, Applicants submit that claims 5 and 8, which depend from claim 1, are non-obvious and respectfully request reconsideration and withdrawal of the outstanding rejection of these claims under §103.

CONCLUSION

In view of the foregoing amendments and remarks, applicants respectfully submit that all of the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited. If there are any questions regarding the application, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

Date August 16, 2002

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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

Versions with Markings to Show Changes Made

In the Claims:

4. (Amended) A plasma treating apparatus comprising an electrode insulating member for insulation between an upper electrode and a reaction chamber, an electrostatic chuck for electrostatically attracting and holding a body to be treated by application of a high voltage to an electric conductor member thereof, a focus ring provided in the vincinity of the upper electrode or lower electrode for effectively transmitting reactive ions toward the treating surface of said body to be treated, and a covering member for covering the inner walls of the reaction chamber, wherein at least one of said electrode insulating member, said electrostatice chuck, said focus ring and said covering member is constituted of the plasma-resistant member defined in Claim 1.

7. (Amended) A plasma treating apparatus comprising an electrode insulating member for insulation between an upper electrode and a reaction chamber, an electrostatic chuck for electrostatically attracting and holding a body to be treated by application of a high voltage to an electric conductor member thereof, a focus ring provided in the vicinity of the upper electrode or lower electrode for effectively transmitting reactive ions toward the treating surface of said body to be treated, and a covering member for covering the inner walls of the reaction chamber, wherein at least one of said electrode insulating member, said electrostatic chuck, said focus ring and said covering member is constituted of the plasma-resistant member defined in Claim 2.